OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

CALCULATION COVER SHEET

1. QA: QA
Page: 1 Of: 9

2. Calculation Title

Calculation: Values and Consumption Rates of Locally Produced Food and Tap Water for the Receptor of Interest

3. Document Identifier (including Revision Number)

CAL-MGR-MD-000005 REV 00

MOL.20000922.0092

4. Total Attachments	5. Attachment Numbers – Number of pages in each
3	#1: 10 pages; #2: 11 pages; #3: 11 pages Attachment I, II, & III 09-18-00

	Print Name	Signature	Date
6. Originator	John Bland	John Bland	7/28/2000
7. Checker	Carl Ellis	Carl B. Ellis	7/31/00
8. Lead	John Bland	John Bland	7/31/2000

9. Remarks

Revision History

10. Revision No.	11. Description of Revision
00	Initial issue.

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

SPECIAL INSTRUCTION SHEET

1. QA: QA

Page: 1 of: 1

Complete Only Applicable Items

DR 9-22-00 mfc

This is a placeholder page for records that cannot be scanned or microfilmed

2. Record Date	3. Accession Number
07/31/2000	ATT-TO MOL.20000922.0092
4. Author Name(s)	**5. Author Organization**
JOHN BLAND	N/A

6. Title

CALCULATION: VALUES AND CONSUMPTION RATES OF LOCALLY PRODUCED FOOD AND TAP WATER FOR THE RECEPTOR OF INTEREST, REVISION 0

7. Document Number(s)	8. Version
CAL-MGR-MD-000005	REVISION 00
9. Document Type MB 9/26/2000 ~~CD-ROM~~ DISKETTE	**10. Medium** DATA
11. Access Control Code PUB	
12. Traceability Designator DC #26188	

13. Comments

THIS IS A SPECIAL PROCESS ~~CD-ROM~~ MB 7/26/2000 DISKETTE AND CAN BE LOCATED THROUGH THE RPC

CONTENTS

TABLES

Page

1. Purpose–

This calculation produces standard statistical data on the consumption of locally produced food and tap water. The results of this calculation provide input parameters for the GENII-S (Leigh et al. 1993) computer code to support calculation of Biosphere Dose Conversion Factors (BDCF) for the nominal performance (groundwater contamination) scenario and the volcanic eruption (contamination of soil by volcanic ash deposition) scenario. The requirement and parameters for these data are identified in *Identification Of The Critical Group (Consumption Of Locally Produced Food And Tap Water)* (CRWMS M&O 2000a). This calculation is performed in accordance with the *Development Plan for Calculation: Values and Consumption Rates of Locally Produced Food and Tap Water for the Receptor of Interest* (CRWMS M&O 2000b).

The calculations are based on Amargosa Valley consumption data gathered for *The 1997 "Biosphere" Food Consumption Survey Summary Findings and Technical Documentation* (DOE 1997).

2. Method–

The scientific approach used in the activity is to use standard Microsoft Excel spreadsheet functions to identify statistical data (mean, standard deviation, minimum, maximum, histograms) from data currently in the Technical Data Management System (TDMS). The source data used to develop this report is from the *Identification Of The Critical Group (Consumption Of Locally Produced Food And Tap Water)* (CRWMS M&O 2000), which is linked to the TDMS by DTN: MO9908COLPRFTW.000 and DTN: MO0001SPACON05.015. These source data are unqualified and are designated To Be Verified (TBV). Their TBV numbers are TBV 3926 and TBV 4000, respectively.

3. Assumptions–

None.

4. Use of Computer Software and Models–

A desktop PC was used to prepare the calculations for submission.

This activity used the following processes to ensure control of electronic management of data. Source data are in the TDMS in Zip file format. These data were downloaded to the calculation leader's PC (CPU #110931), unzipped using WinZip software (version: WinZip 7.0, SR-1), and opened in an Excel (version: Microsoft Excel 97 SR-2) spreadsheet. The data in the spreadsheet were verified through comparison with a printout of the unzipped TDMS file. No subroutines or macros were used. Calculations were made using standard Excel functions, which is appropriate for this application. Data were backed up daily on the network server to maintain integrity and security of the data. Completed data will be transmitted to the TDMS using the WinZip function, which contains internal functions to maintain data integrity.

5. Calculation–

Data for the calculation was derived from the *Identification Of The Critical Group (Consumption Of Locally Produced Food And Tap Water)* (CRWMS M&O 2000a) and are located in the TDMS as MO0001SPACON05.015 (TBV 4000; consumption values for 52 residents of Amargosa Valley who eat locally produced food and tap water, but who do not have a food garden) and MO9908COLPRFTW.000 (TBV 3926; consumption values for 77 residents of Amargosa Valley who eat locally produced food and tap water, but who do have a food garden). Calculations are provided for each data set (called the group of 52 and the group of 77, respectively) and for the combined data set (the group of 129).

Standard statistical parameters were calculated using the Excel function located at the toolbar menu: "Tools - Data Analysis - Descriptive Statistics - Summary Statistics."

Histograms are also required to determine the frequency distribution curve. These were developed using the Excel function located at the toolbar menu: "Tools - Data Analysis - Descriptive Statistics – Histogram."

GENII-S (Leigh et al. 1993, p. 5-33) requires that for a log uniform distribution, the parameters of maximum and minimum, and mean be provided as input. The calculations for these parameters are identified in Section 6, Results. The mean and other parameters (e.g., standard deviation, standard error, mode) are also included in Attachments I, II, and III which provide the data, statistical calculations, and histograms. Because GENII-S (Leigh et al. 1993, p. 5-33) will not accept a value of zero for the log uniform distribution (the logarithm of zero is infinity), and because the data sets all contain a zero for each food type, it is necessary to calculate a "proxy" minimum for use by GENII-S whenever the distribution is log uniform. The formula for

$$x_{\min} \cong \exp[\ln(x_{\max}) - \frac{x_{\max}}{\mu}]$$

calculating this minimum is identified in Ragan 1998. In the calculation, the minimum is derived from the maximum and the mean.

For a uniform distribution, required parameters are also minimum, maximum, and mean. However, an actual minimum of zero is an acceptable input parameter into GENII-S (Leigh et al. 1993, p. 5-33) for the uniform distribution.

6. Results–

Calculations for each of the groups were performed and are shown in Attachments I through III. Histograms for each group by food type are presented in the attachments. The histograms show that the frequency distribution for the consumption of all food types, except tap water, for all food groups, is log uniform. The frequency distribution for tap water is uniform.

Table 1 presents the distribution and mean, minimum, and maximum values for consumption of locally produced food and tap water for each of the food types and tap water for the group of 52. Tables 2 and 3 present the data for the group of 77 and the combined group of 129, respectively. These data will be submitted to TDMS in accordance with AP-3.14Q, *Transmittal of Input,* Rev

0, ICN 1. These data will be designated "existing/unqualified" because their source data are unqualified (TBV 3926 and TBV 4000).

Table 1. Distributions, Mean, Minimum, and Maximum Consumption Levels of Locally Produced Food by Type and Tap Water for the Group of 52

Food Type[1]	Distribution	Mean	Minimum[5]	Maximum
Leafy Vegetables	Log uniform	5.10	3.97E-03	47.91
Root Vegetables	Log uniform	2.92	8.30E-05	38.01
Grains	Log uniform	0.06	8.59E-23	3.29
Fruit	Log uniform	6.51	9.47E-04	73.27
Poultry	Log uniform	0.40	2.79E-09	8.75
Fish[2]	Log uniform	0.08	3.24E-10	1.70
Eggs	Log uniform	3.76	0.04	23.67
Meat[3]	Log uniform	4.10	0.03	28.03
Milk	Log uniform	9.46	7.75E-05	136.03
Tap Water[4]	Uniform	627.87	0.00	1,487.45

Notes: [1] The values shown for food are in kilograms; for milk and tap water they are in liters. The values shown are not weighted.
[2] The most common source of "locally produced" fish in the Amargosa Valley is the catfish farm (CRWMS M&O 2000a, p. 17).
[3] "Meat" is comprised of beef and pork.
[4] This refers to water from a local ground source. It excludes any bottled water purchased from a commercial vendor.
[5] For each food type where the recommended distribution is log uniform, the actual minimum is zero. However, to accommodate the GENII-S input parameters for a log uniform distribution, the minimum was estimated using the function developed by Ragan (1998); minimum = $e^{[\ln(\text{maximum})-(\text{maximum}/\text{mean})]}$. This calculation uses an unrounded mean, although it is presented as two digits in the table. For distributions that are uniform, the actual minimum value of zero is used.

Table 2. Distributions, Mean, Minimum, and Maximum Consumption Levels of Locally Produced Food by Type and Tap Water for the Group of 77

Food Type[1]	Distribution	Mean	Minimum[5]	Maximum
Leafy Vegetables	Log uniform	15.14	1.16	59.68
Root Vegetables	Log uniform	7.81	0.65	29.86
Grains	Log uniform	0.48	8.79E-11	12.33
Fruit	Log uniform	15.57	0.18	97.69
Poultry	Log uniform	0.80	2.22E-05	10.50
Fish[2]	Log uniform	0.47	6.17E-08	8.79
Eggs	Log uniform	6.68	0.23	33.34
Meat[3]	Log uniform	2.93	7.34E-07	53.11
Milk	Log uniform	4.14	2.91E-09	100.36
Tap Water[4]	Uniform	752.85	0.00	1,487.45

Notes: [1] The values shown for food are in kilograms; for milk and tap water they are in liters. The values shown are not weighted.

[2] The most common source of "locally produced" fish in the Amargosa Valley is the catfish farm (CRWMS M&O 2000a, p. 17).

[3] "Meat" is comprised of beef and pork.

[4] This refers to water from a local ground source. It excludes any bottled water purchased from a commercial vendor.

[5] For each food type where the recommended distribution is log uniform, the actual minimum is zero. However, to accommodate the GENII-S input parameters for a log uniform distribution, the minimum was estimated using the function developed by Ragan (1998); minimum = $e^{[\ln(\text{maximum})-(\text{maximum}/\text{mean})]}$. This calculation uses an unrounded mean, although it is presented as two digits in the table. For distributions that are uniform, the actual minimum value of zero is used.

Table 3. Distributions, Mean, Minimum, and Maximum Consumption Levels of Locally Produced Food by Type and Tap Water for the Combined Group of 129

Food Type[1]	Distribution	Mean	Minimum[5]	Maximum
Leafy Vegetables	Log uniform	11.09	0.27	59.68
Root Vegetables	Log uniform	5.84	0.06	38.01
Grains	Log uniform	0.31	8.74E-17	12.33
Fruit	Log uniform	11.92	0.03	97.69
Poultry	Log uniform	0.64	8.08E-07	10.50
Fish[2]	Log uniform	0.31	4.29E-12	8.79
Eggs	Log uniform	5.50	0.08	33.34
Meat[3]	Log uniform	3.40	8.93E-06	53.11
Milk	Log uniform	6.25	4.79E-08	136.03
Tap Water[4]	Uniform	703.05	0.00	1,487.45

Notes: [1] The values shown for food are in kilograms; for milk and tap water they are in liters. The values shown are not weighted.

[2] The most common source of "locally produced" fish in the Amargosa Valley is the catfish farm (CRWMS M&O 2000a, p. 17).

[3] "Meat" is comprised of beef and pork.

[4] This refers to water from a local ground source. It excludes any bottled water purchased from a commercial vendor.

[5] For each food type where the recommended distribution is log uniform, the actual minimum is zero. However, to accommodate the GENII-S input parameters for a log uniform distribution, the minimum was estimated using the function developed by Ragan (1998); minimum = $e^{[\ln(\text{maximum})-(\text{maximum}/\text{mean})]}$. This calculation uses an unrounded mean, although it is presented as two digits in the table. For distributions that are uniform, the actual minimum value of zero is used.

7. References

7.1 Documents Cited

CRWMS M&O 2000a. *Identification of the Critical Group (Consumption of Locally Produced Food and Tap Water).* ANL-MGR-MD-000005 REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.20000224.0399.

CRWMS M&O 2000b. *Development Plan for Calculation: Values and Consumption Rates of Locally Produced Food and Tap Water for the Receptor of Interest.* Development Plan TDP-MGR-MD-000026 REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: Submit to RPC URN-0485.

DOE (U.S. Department of Energy) 1997. *The 1997 "Biosphere" Food Consumption Survey Summary Findings and Technical Documentation.* Washington, D.C.: U.S. Department of Energy, Office of Civilian Radioactive Waste Management. ACC: MOL.19981021.0301.

Leigh, C.D.; Thompson, B.M.; Campbell, J.E.; Longsine, D.E.; Kennedy, R.A.; and Napier, B.A. 1993. *User's Guide for GENII-S: A Code for Statistical and Deterministic Simulations of Radiation Doses to Humans from Radionuclides in the Environment.* SAND91-0561. Albuquerque, New Mexico: Sandia National Laboratories. TIC: 231133.

Ragan, G.E. 1998. "Supplement to the Biosphere Input Data Files on Using log uniform Distributions in GENII-S to Model Uncertainty in Food Consumption Rates." Memorandum from G.E. Ragan (SAIC) to D. Swanson, March 25, 1998, with attachments. ACC: MOL.19990406.0479.

7.2 Source Data, Listed By Data Tracking Number

MO9908COLPRFTW.000. Consumption of Locally Produced Food and Tap Water. Submittal date: 08/05/1999.

MO0001SPACON05.015. Consumption Values for the Amargosa Valley Resident Group. Submittal date: 01/13/2000.

8. Attachments

Attachment I: Calculation for Group of 52
Attachment II: Calculation for Group of 77
Attachment III: Calculation for Group of 129

ATTACHMENT I - CALCULATION FOR GROUP OF 52

This provides a description of the calculation CAL-MGR-MD-000005 (DC #26188), performed IAW TDP-MGR-MD-000026 (DC #26187). The calculation is performed in three workbooks, one for each group of 52, 77, and 129 residents.

This workbook provides data on the group of 52 residents of Amargosa Valley who consume locally produced food and water but who do not have a food garden. Food consumption data for this group is found in the Technical Data Management System, DTN: MO0001SPACON05.015. Data is in TDMS in zip file format and is downloaded and opened into the worksheet, "Rounded2, Amargosa 52." Because this data will be combined with data on the group of 77 residents who consume locally produced food and water and who have a food garden, an additional column, "Has garden?" has been added to distinguish the two groups. This source data is unqualified, TBV #4000.

Process:
Descriptive statistics are calculated using standard Excel functions, from the menu:
Tools - Data Analysis - Descriptive Statistics - Summary Statistics
The range is all cells for a food type containing data.

The Calculated LogUniform Minimum is calculated using the formula
Minimum = EXP(LN(Maximum)-(Maximum/Mean))
This formula is found in Ragan, G.E. 1998. "Supplement to the Biosphere Input Data Files on Using Log-Uniform Distributions in GENII-S to Model Uncertainty in Food Consumption Rates." Memorandum from G.E. Ragan (SAIC) to D. Swanson, March 25, 1998, with attachments. ACC: MOL.19990406.0479. (DIRS #125057)

Probability distribution shape is determined by looking at the histograms in worksheet "Histograms - 52." The best estimate of the distribution is log uniform for all food types except tap water, which is uniform.

Histograms on worksheet "Histograms - 52" are calculated using Excel spreadsheet function,
Tools - Data Analysis - Descriptive Statistics - Histogram
The range is all cells for a food type containing data. Bin widths are identified based on the maximum value divided by approximately 10, so as to provide deciles.
Some food types have very small maximums and a smaller divisor is used.

The following is information on the data set is from the TDMS.

Title of Data: CONSUMPTION VALUES FOR THE AMARGOSA VALLEY RESIDENT GROUP

Description of Data: CONSUMPTION VALUES BY GENDER AND FOOD TYPE FOR 52 MEMBERS OF THE AMARGOSA VALLEY "RESIDENTS" GROUP.

Acquisition/Development Method: THE DATA ARE DEVELOPED IN AN ANALYSIS AND MODEL REPORT PREPARED UNDER PROCEDURE AP-3.10Q, REV. 1, ANALYSES AND MODELS.

Dataset Information:

File size	File name	Description
4,514.00	av52.zip	MS Excel file compressed into *.zip format

To download the model files, select the "Download Files" button. **Important:** The entire set of files requires approximately 20 Kbytes of available disk space.

If the data submmittal is too large for an electronic transfer, or if you need other assistance, please contact the System Performance Assessment Administrator.

Be sure to reference the data tracking number in any correspondence.

Important Notes:

When using any of the information herein, the Data Tracking Number, Qualification Status, TBV Status, and any Disclaimers, Constraints, Limitations, etc... should be kept with your downloaded data.

Data Tracking Number:
MO0001SPACON05.015

Verification Status:
To be verified, TBV # 4000

Data Qualification Status: Unqualified

Preliminary Data: No

Parameters:
CONSUMPTION

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 52) [1,2]

Has garden?	Case No.	Gender[2]	Leafy Veg	Root Veg	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
No	1	2	4.15	0	0	0	0	0	0.08	0	247.91	0
No	2	1	0	1.95	0	0	0	0	0	0	247.91	0
No	3	2	0.89	4.32	0	11.1	0.67	0	1.08	0	867.68	10.23
No	4	1	2.71	0.97	0	1.03	0	0	1.3	136.03	867.68	26.33
No	5	1	0.19	1.22	0	0	0	0	3.57	0	247.91	0
No	6	1	10.85	3.9	0	1.03	0.48	0.34	1.79	0	0	0.67
No	7	2	0.15	6.91	0	16.65	0	0	23.67	54.74	1487.45	0
No	8	2	1.47	0.86	0	0	0.33	0	11.84	18.25	867.68	20.9
No	9	1	0	6.82	0	4.82	0	0.34	0	136.03	247.91	7.8
No	10	1	20.47	4.55	0	4.13	0.95	0	1.3	0.44	1487.45	0.67
No	11	2	0.89	0	0	0	0	0	0	0	537.13	0
No	12	2	0	2.16	0	5.55	0	0	0	0	247.91	0
No	13	2	0	0	0	0	0	0	0.08	0	247.91	0
No	14	2	0.44	0.37	0	0.95	0	0	0	0	867.68	0
No	15	2	0	0	0	4.44	0	0	0.08	0	867.68	0
No	16	2	1.2	0	0	1.9	0	0	5.38	0	247.91	0
No	17	2	3.56	2.96	0	13.32	0	0	0	17.11	0	15.12
No	18	1	0	0	0	6.02	0	0	3.57	0	247.91	0
No	19	2	0	0	0	0	0	0	8.61	0.33	537.13	27.24
No	20	2	34.26	0.74	0	0.32	0	0	11.84	0	1487.45	0
No	21	2	1.11	0	0	0.95	0	0	0	0	1487.45	0
No	22	2	2.08	0	3.29	22.2	3.9	0.25	1.08	0	247.91	7.88
No	23	1	22.38	18.75	0	0	1.91	0	1.3	0	247.91	17.18
No	24	2	0	0	0	0	0	0	3.8	0	247.91	0
No	25	2	0	0.74	0	10.47	0	0	0.46	0	867.68	0.68
No	26	1	1.16	0	0	2.07	0	0	0	0	0	0
No	27	2	4.8	0.93	0	6.66	0	0	8.88	0	867.68	0
No	28	2	2.06	0.37	0	16.65	0	0	2.31	0	867.68	0
No	29	2	0	0	0	4.44	0	0	0.08	0	867.68	0
No	30	2	0	0	0	0	0	0	6.46		0	0
No	31	2	6.14	0.37	0	6.66	0	0.13	10.76	100.36	537.13	7.94
No	32	2	5.34	4.44	0	1.59	0	0.5	0	0	867.68	0.18
No	33	1	0	2.27	0	0.34	0	0	0		867.68	0

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 52) [1,2]

Has garden?	Case No.	Gender[2]	Leafy Veg	Root Veg	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
No	34	1	10.18	0.97	0	12.05	0	0	1.52	0	867.68	1.09
No	35	2	0.44	0	0	0.95	0	0	0	0	537.13	0
No	36	1	0.19	0	0	1.38	0	0.11	0.81	0	537.13	0
No	37	1	0.19	0	0	0	0	0	0	0	0	0
No	38	2	5.19	0	0	11.1	0	0	0	0	867.68	0
No	39	1	11.81	9.09	0	7.75	0	0.34	0	0	1487.45	1.87
No	40	2	0	38.01	0	4.76	0	0	18.6	9.77	867.68	0.34
No	41	2	3.55	4.75	0	6.98	0	0	0	0	867.68	28.03
No	42	1	0	0	0	9.64	0	0	5.36	0	867.68	0
No	43	2	34.57	4.32	0	15.7	0	0.13	0.08	0	867.68	17.34
No	44	2	0.74	4.07	0	4.44	0	0	0.23	0	537.13	0.11
No	45	1	2.59	0.97	0	0	3.82	0	16.67	0	247.91	1.17
No	46	1	0.37	0.16	0	0.34	0	0.11	0	0	537.13	0
No	47	2	47.91	10.86	0	73.27	0	0	23.67	0	1487.45	12.82
No	48	1	11.1	5.68	0	18.93	8.75	0	0.54	0	537.13	7.51
No	49	1	6.78	0	0	12.05	0	1.7	12.5	0	537.13	0
No	50	2	0.89	0	0	0	0	0	1.73	0	537.13	0
No	51	1	1.85	5.68	0	12.05	0	0	0	0		0.15
No	52	2	0.44	1.48	0	3.81	0	0	4.3	0	0	0
DTN: MO0001SPACON05.015												
		Total	265.09	151.64	3.29	338.49	20.81	3.95	195.33	473.06	32,021.48	213.25
		No. Cases	52	52	52	52	52	52	52	50	51	52
		Mean	5.10	2.92	0.06	6.51	0.40	0.08	3.76	9.46	627.87	4.10

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 52) [1,2]

Has garden?	Case No.	Gender[2]	Leafy Veg	Root Veg	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Descriptive Statistics												
Mean			5.10	2.92	0.06	6.51	0.40	0.08	3.76	9.46	627.87	4.10
Standard Error			1.37	0.84	0.06	1.54	0.20	0.04	0.85	4.35	61.33	1.09
Median			1.00	0.80	0.00	3.97	0.00	0.00	0.95	0.00	537.13	0.00
Mode			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	867.68	0.00
Standard Deviation			9.86	6.07	0.46	11.11	1.42	0.25	6.10	30.75	437.97	7.83
Sample Variance			97.20	36.82	0.21	123.49	2.03	0.06	37.18	945.36	191,820.28	61.31
Minimum			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum			47.91	38.01	3.29	73.27	8.75	1.70	23.67	136.03	1,487.45	28.03
Sum			265.09	151.64	3.29	338.49	20.81	3.95	195.33	473.06	32,021.48	213.25
Count			52.00	52.00	52.00	52.00	52.00	52.00	52.00	50.00	51.00	52.00
Confidence Level(95.0%)			2.74	1.69	0.13	3.09	0.40	0.07	1.70	8.74	123.18	2.18
Calculated Log Uniform Min[3]			3.97E-03	8.30E-05	8.59E-23	9.47E-04	2.79E-09	3.24E-10	0.04	7.75E-05	0.00	0.03
Maximum			47.91	38.01	3.29	73.27	8.75	1.70	23.67	136.03	1,487.45	28.03
Probability distribution shape:			log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	uniform	log-uniform

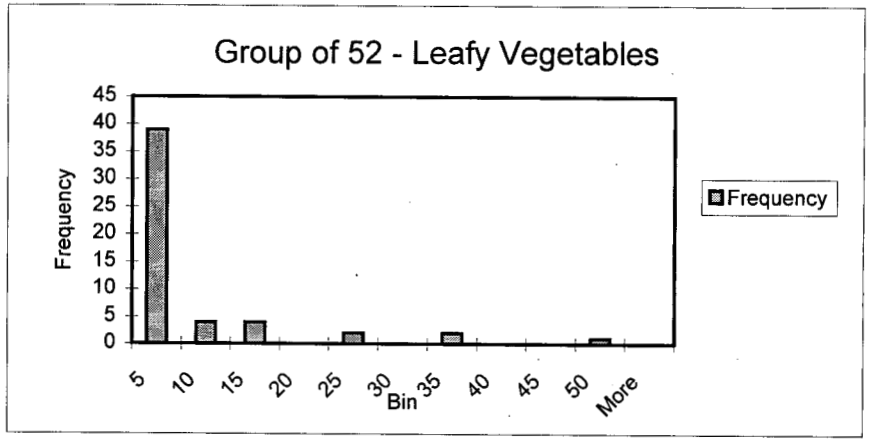
Notes: [1]The values shown for food are in kilograms; for milk and tap water they are in liters. A blank cell indicates that the respondent did not provide an answer.

[2]Females are coded as a 2 and males are coded as a 1.

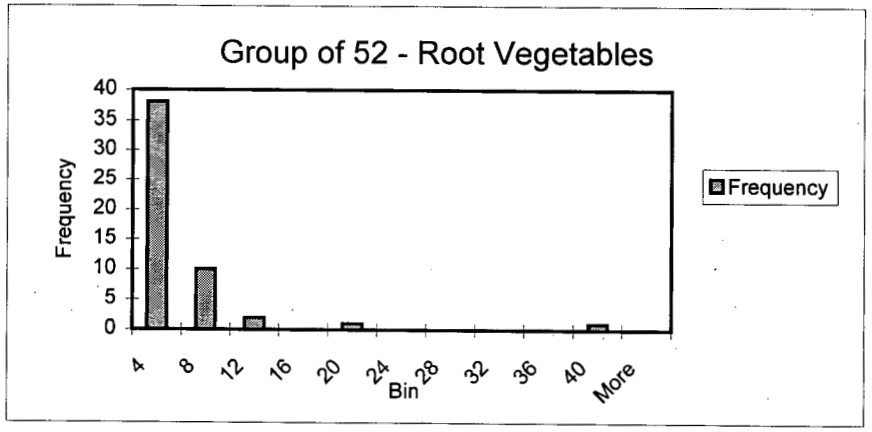
[3]Log uniform minimum is calculated from Ragan (1998) using an unrounded value for the mean.

Histograms for group of 52 for each food group.

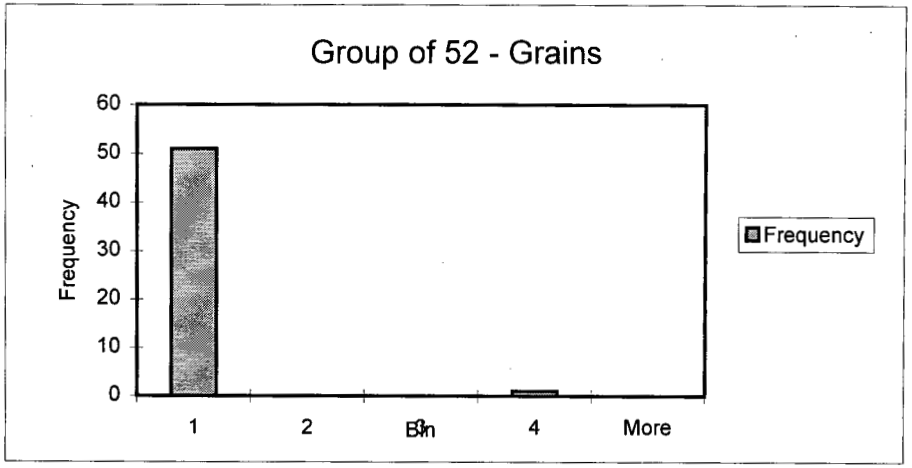
Food Type	From Column	Bin	Frequency
Leafy Veg	D	*Bin*	*Frequency*
	5	5	39.00
	10	10	4.00
	15	15	4.00
	20	20	0.00
	25	25	2.00
	30	30	0.00
	35	35	2.00
	40	40	0.00
	45	45	0.00
	50	50	1.00
		More	0.00



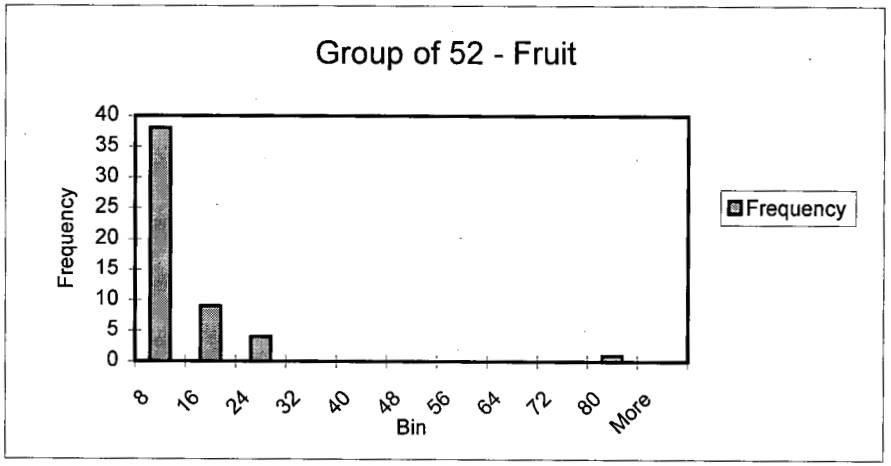
		Bin	Frequency
Root Veg	E	*Bin*	*Frequency*
	4	4	38.00
	8	8	10.00
	12	12	2.00
	16	16	0.00
	20	20	1.00
	24	24	0.00
	28	28	0.00
	32	32	0.00
	36	36	0.00
	40	40	1.00
		More	0.00



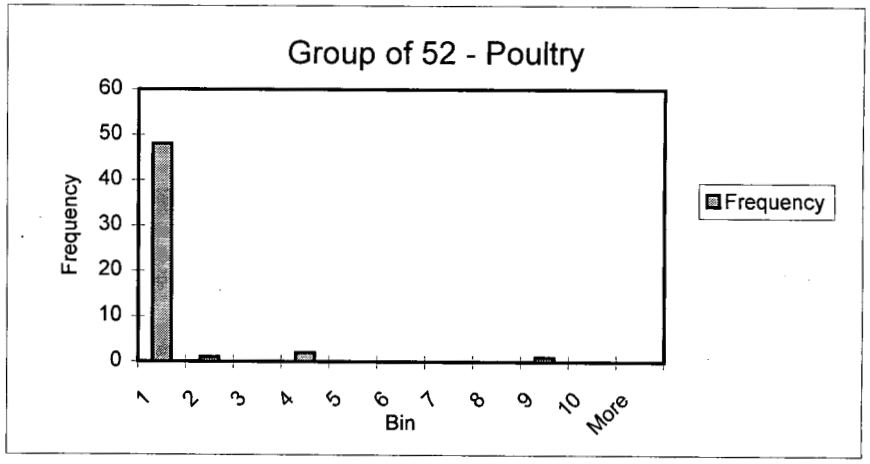
Grains	F	*Bin*	*Frequency*
	1	1	51.00
	2	2	0.00
	3	3	0.00
	4	4	1.00
		More	0.00



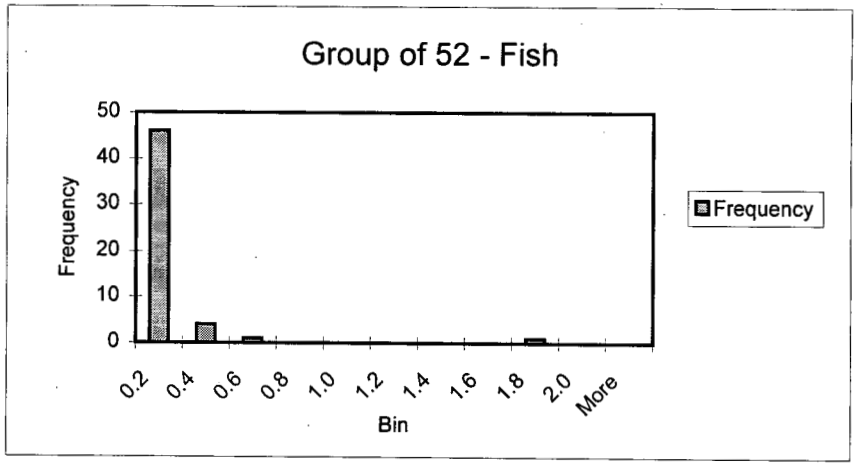
Fruit	G	*Bin*	*Frequency*
	8	8	38.00
	16	16	9.00
	24	24	4.00
	32	32	0.00
	40	40	0.00
	48	48	0.00
	56	56	0.00
	64	64	0.00
	72	72	0.00
	80	80	1.00
		More	0.00



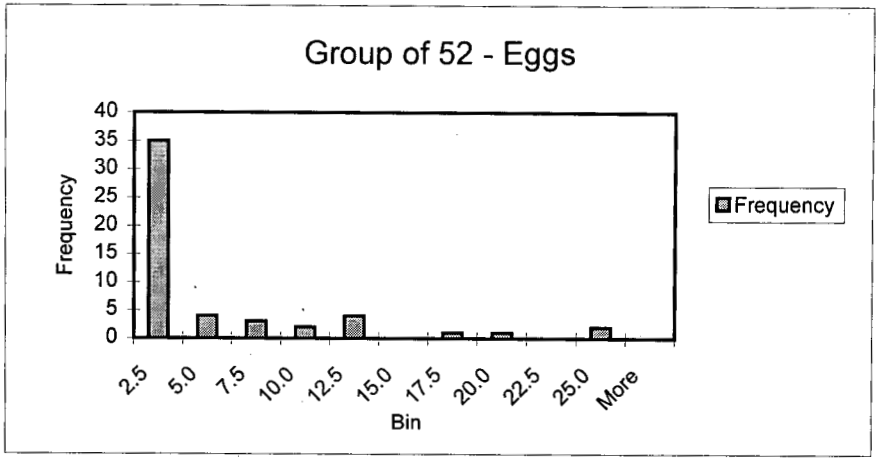
Poultry	H	*Bin*	*Frequency*
	1	1	48.00
	2	2	1.00
	3	3	0.00
	4	4	2.00
	5	5	0.00
	6	6	0.00
	7	7	0.00
	8	8	0.00
	9	9	1.00
	10	10	0.00
		More	0.00



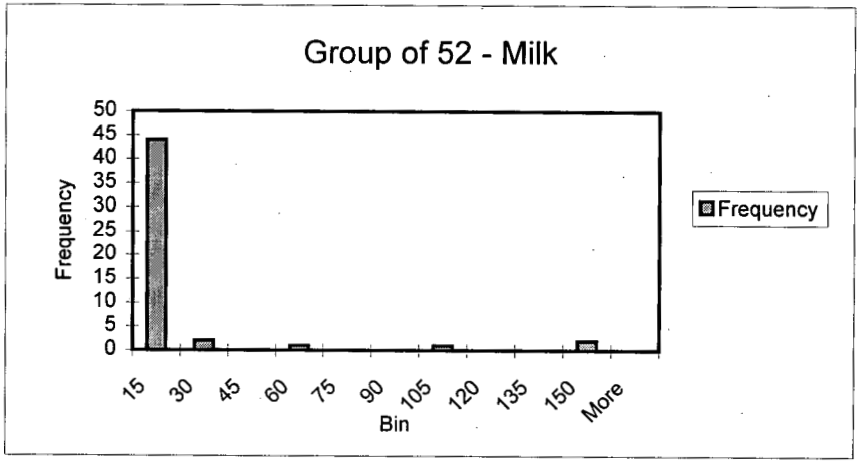
Fish	I	*Bin*	*Frequency*
	0.2	0.2	46.00
	0.4	0.4	4.00
	0.6	0.6	1.00
	0.8	0.8	0.00
	1.0	1.0	0.00
	1.2	1.2	0.00
	1.4	1.4	0.00
	1.6	1.6	0.00
	1.8	1.8	1.00
	2.0	2.0	0.00
		More	0.00



Eggs	J	*Bin*	*Frequency*
	2.5	2.5	35.00
	5.0	5.0	4.00
	7.5	7.5	3.00
	10.0	10.0	2.00
	12.5	12.5	4.00
	15.0	15.0	0.00
	17.5	17.5	1.00
	20.0	20.0	1.00
	22.5	22.5	0.00
	25.0	25.0	2.00
		More	0.00

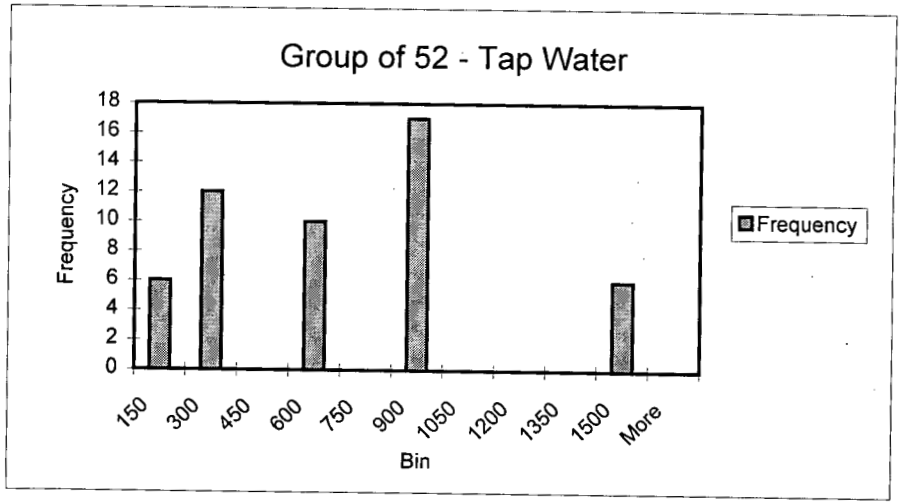


Milk	K	*Bin*	*Frequency*
	15	15	44.00
	30	30	2.00
	45	45	0.00
	60	60	1.00
	75	75	0.00
	90	90	0.00
	105	105	1.00
	120	120	0.00
	135	135	0.00
	150	150	2.00
		More	0.00



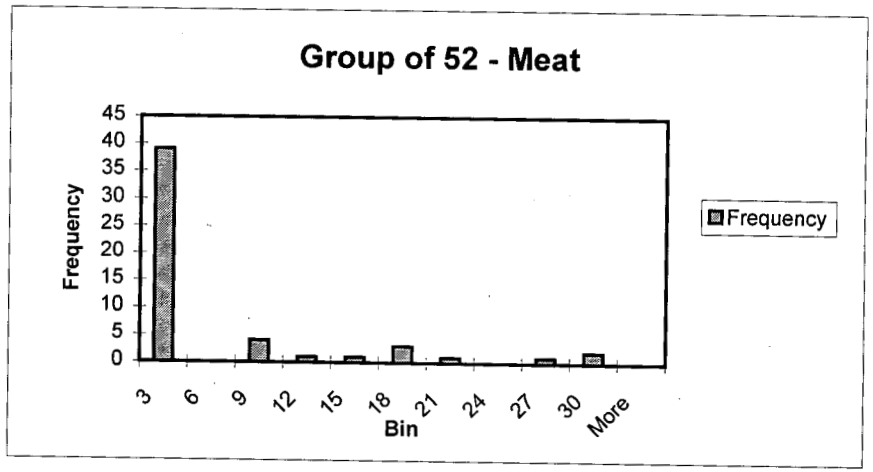
Tap Water	L
	150
	300
	450
	600
	750
	900
	1050
	1200
	1350
	1500

Bin	*Frequency*
150	6.00
300	12.00
450	0.00
600	10.00
750	0.00
900	17.00
1050	0.00
1200	0.00
1350	0.00
1500	6.00
More	0.00



Meat	M
	3
	6
	9
	12
	15
	18
	21
	24
	27
	30

Bin	*Frequency*
3	39.00
6	0.00
9	4.00
12	1.00
15	1.00
18	3.00
21	1.00
24	0.00
27	1.00
30	2.00
More	0.00



ATTACHMENT II - CALCULATION FOR GROUP OF 77

This provides a description of the calculation CAL-MGR-MD-000005 (DC #26188), performed IAW TDP-MGR-MD-000026 (DC #26187). The calculation is performed in three workbooks, one for each group of 52, 77, and 129 residents.

This workbook provides data on the group of 77 residents of Amargosa Valley who consume locally produced food and water and who also have a food garden. Food consumption data for this group is found in the Technical Data Management System, DTN: MO9908COLPRFTW.000
Data is in TDMS in zip file format and is downloaded and opened into the worksheet, "Rounded2, Amargosa 77." Because this data will be combined with data on the group of 52 residents who consume locally produced food and water but who do not have a food garden, an additional column, "Has garden?" has been added to distinguish the two groups.
This source data is unqualified, TBV #3926.

Process:
Descriptive statistics are calculated using standard Excel functions, from the menu:
Tools - Data Analysis - Descriptive Statistics - Summary Statistics
The range is all cells for a food type containing data.

The Calculated LogUniform Minimum is calculated using the formula
Minimum = EXP(LN(Maximum)-(Maximum/Mean))
This formula is found in Ragan, G.E. 1998. "Supplement to the Biosphere Input Data Files on Using Log-Uniform Distributions in GENII-S to Model Uncertainty in Food Consumption Rates." Memorandum from G.E. Ragan (SAIC) to D. Swanson, March 25, 1998, with attachments. ACC: MOL.19990406.0479. (DIRS #125057)

Probability distribution shape is determined by looking at the histograms in worksheet "Histograms - 77." The best estimate of the distribution is log uniform for all food types except tap water, which is uniform.

Histograms on worksheet "Histograms - 77" are calculated using Excel spreadsheet function,
Tools - Data Analysis - Descriptive Statistics - Histogram
The range is all cells for a food type containing data. Bin widths are identified based on the maximum value divided by approximately 10, so as to provide deciles.
Some food types have very small maximums and a smaller divisor is used.

The following is information on the data set is from the TDMS.

s99349_001 DATA REPORT

TABLE DESCRIPTION:
Consumption data of locally produced food and tap water in Southern Nye County and Indian Springs Nevada 05/01/1997 to 06/01/1997.

TDIF: 308774

DTN: MO9908COLPRFTW.000

FOOTNOTES: Sample Number is case number and is a number assigned to the set of values associated with a given respondent. Class is gender. In the Class column: 1 = Male and 2 = Female. Type is the type of product consumed (all products locally produced except tap water). In the Type column: meat refers to beef and pork; root vegetables are all those other than leafy vegetables. Consumption is the amount of product consumed. In the Consumption column: all products measured in kilograms, except for milk and tap water which are measured in liters; no recall = respondent could not recall amount consumed.

PARAMETERS:
CONSUMPTION

****

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 77) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	1	2	30.07	22.4	4.11	97.69	2.51	0	1.69	0	867.68	0
Yes	2	1	13.26	5.68	0	48.19	0	0	19.65	0	1198.22	53.11
Yes	3	2	12.89	14.25	0	44.4	0.11	0.13	18.6	0.33	537.13	49.18
Yes	4	2	49.47	13.57	12.33	34.89	1.34	1.51	18.6	0	537.13	5.49
Yes	5	1	30.53	17.05	0	12.05	0	7.5	12.5	0	867.68	48.53
Yes	6	2	58.51	6.48	0	48.84	0	0	3.23	0	867.68	2.07
Yes	7	2	20.04	29.86	0	41.87	7.36	0	18.6	0	867.68	0
Yes	8	1	14.25	25.01	0	26.51	7.88	0	33.34	68.02	867.68	7.18
Yes	9	1	35.28	25.01	0	53.01	0	0	0	0	537.13	0
Yes	10	1	35.17	29.47	0	45.44	0	0	0	0	867.68	0
Yes	11	2	31.13	16.29	0	36.63	0	0	18.6	0	867.68	0
Yes	12	2	0	19	0	36.63	7.8	7.03	23.67	100.36	537.13	0
Yes	13	1	59.68	22.73	0	9.64	0	0.11	0	0	867.68	0
Yes	14	2	59.26	14.93	0	4.44	0.67	1.51	0.92	0	867.68	0.94
Yes	15	1	21.4	5.36	0	18.93	0	0	25.01	0	537.13	11.87
Yes	16	2	42.72	13.57	0	1.9	0.67	0	11.84	0	1198.22	9.67
Yes	17	2	10.61	19	0	26.17	0	0	18.6	0	1487.45	0
Yes	18	2	14.7	6.91	0	38.38	0.11	0.75	11.84	0	537.13	0.68
Yes	19	2	45.68	19	0	3.81	0	0	3.69	0	0	0
Yes	20	1	43.4	8.53	0	18.07	0	0	0.32	0	1487.45	0.44
Yes	21	2	12.23	10.18	0	44.4	0	0.5	0	0	537.13	2.36
Yes	22	2	32.75	9.5	0	10.47	0.56	0.38	11.84	0	1198.22	0.06
Yes	23	2	9.36	14.25	0	26.17	3.68	0	11.84	0	0	0
Yes	24	1	21.43	11.37	0	9.64	2.39	1.36	12.12	0	247.91	5.95
Yes	25	1	30.71	27.28	0	0	0	0	5.68	0	1198.22	0.22
Yes	26	1	8.88	11.37	0	24.1	7	0	7.58	no recall	537.13	0.93
Yes	27	2	22.49	6.48	0	13.32	0.67	1.51	13.53	45.62	867.68	1.58
Yes	28	2	2.21	1.85	0	41.87	0	0	11.84	0	867.68	0
Yes	29	1	22.7	1.46	0	7.23	0	0	24.25	0	867.68	0.94
Yes	30	1	24.04	12.5	0	1.89	0	0	16.67	0	0	0.15
Yes	31	2	7.88	4.07	0	22.2	0	0	18.6	0	537.13	1.88

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 77) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	32	2	14.29	10.18	0	24.42	0	0	5.38	0	867.68	0
Yes	33	1	9.52	1.95	0	24.1	10.5	0	7.14	0	867.68	0
Yes	34	2	18.37	9.5	0	5.23	0	8.79	5.07	0	0	0.19
Yes	35	2	14.06	6.91	0	26.17	0	0	0	0	867.68	0
Yes	36	2	0.89	0.74	0	44.4	0	0	0.23	0	537.13	0
Yes	37	2	34.26	0	0	4.44	0	0	5.07	0	537.13	2.07
Yes	38	2	12.46	2.96	0	26.64	0	0	1.69	0	1487.45	0
Yes	39	1	21.83	0.97	0	19.28	0	0.34	0	0	1487.45	0
Yes	40	2	7.85	6.79	0	6.66	0	0	18.6	0	867.68	1.88
Yes	41	1	20.84	12.5	0	3.79	0	0	0.65	0	1198.22	0
Yes	42	2	7.12	16.29	8.22	0	0.67	0	0.54	0	247.91	0.81
Yes	43	2	3.55	9.5	0	1.9	0	0.13	3.8	0	537.13	13.62
Yes	44	1	9.82	5.68	0	7.23	1.19	0.23	8.34	24.73	82.64	0
Yes	45	2	4.41	8.14	0	15.7	0	0	1.15	0	1487.45	0.38
Yes	46	2	7.96	8.64	0	0.95	0	0	11.84	0	1487.45	0
Yes	47	2	15.7	3.45	0	8.88	0	0	0	0	1487.45	0
Yes	48	1	8.51	5.68	0	12.05	0	0	1.79	0	247.91	0
Yes	49	2	15.59	0.74	0	11.1	0	0	0.46	0	1487.45	0
Yes	50	2	13.22	4.07	0	8.88	0	0	0.92	75.27	1487.45	0.38
Yes	51	2	7.15	5.18	12.33	1.9	0	0.25	0	0	247.91	0
Yes	52	2	2.8	2.59	0	17.76	0	0	2.31	0	247.91	0
Yes	53	2	6.66	1.85	0	8.88	0	0	5.07	0	537.13	0
Yes	54	2	12.54	8.64	0	0	0	0	0.92	0	1198.22	0
Yes	55	2	6.4	0.37	0	4.44	0	0	8.88	0	537.13	0
Yes	56	1	10.96	9.09	0	0	0	0	0	0	867.68	0
Yes	57	2	2.08	2.59	0	6.66	0	3.77	4.23	0	537.13	0.38
Yes	58	2	7.66	0.37	0	2.22	0	0	8.88	0	0	0
Yes	59	2	0.44	0.86	0	17.76	0	0	0	0	1487.45	0
Yes	60	1	17.28	0	0	0	0.48	0	0.32	0	537.13	0.23
Yes	61	1	3.81	1.95	0	9.64	0	0	0	0	867.68	0
Yes	62	2	1.47	0	0	4.44	0	0	8.88	0	537.13	0
Yes	63	1	0.74	0	0	4.13	6.13	0	3.25	0	0	0

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 77) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	64	1	6.98	2.44	0	0	0.16	0	3.79	0	1487.45	0.47
Yes	65	2	0	0.37	0	4.44	0	0	8.61	0	247.91	0
Yes	66	2	5.88	0	0	0	0	0.25	5.07	0	867.68	0
Yes	67	2	6.79	0.74	0	0.95	0	0	2.69	0	867.68	0
Yes	68	2	0.44	0	0	8.88	0	0	0	0	82.64	0
Yes	69	1	0.74	0	0	0.34	0	0	3.57	0	247.91	0
Yes	70	1	0	0	0	2.07	0	0	0	0	1198.22	2.34
Yes	71	2	0.15	2	0	1.27	0	0	0	0	867.68	0
Yes	72	2	0	2.59	0	0	0	0	0.46	0	1198.22	0
Yes	73	1	0.58	0	0	2.06	0	0	0	0	1198.22	0
Yes	74	2	0.79	0	0	0	0	0	0.15	0	247.91	0
Yes	75	1	0.19	0.16	0	0.34	0	0	0	0	247.91	0
Yes	76	2	0.3	0.25	0	0	0	0	0	0	537.13	0
Yes	77	1	0	0	0	0	0	0	0.32	0	537.13	0
DTN: MO9908COLPRFTW.000												
		Total	1,165.81	601.14	36.99	1,198.78	61.88	36.05	514.72	314.33	57,969.15	225.98
		No. Cases	77	77	77	77	77	77	77	76	77	77
		Mean	15.14	7.81	0.48	15.57	0.80	0.47	6.68	4.14	752.85	2.93

Descriptive Statistics

Mean	15.14	7.81	0.48	15.57	0.80	0.47	6.68	4.14	752.85	2.93
Standard Error	1.73	0.91	0.25	2.05	0.25	0.18	0.89	1.95	51.43	1.13
Median	10.61	5.68	0.00	8.88	0.00	0.00	3.69	0.00	867.68	0.00
Mode	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	867.68	0.00
Standard Deviation	15.22	8.02	2.21	17.99	2.16	1.58	7.81	17.03	451.26	9.94
Sample Variance	231.70	64.27	4.88	323.68	4.68	2.50	60.94	290.10	203,631.73	98.71
Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	59.68	29.86	12.33	97.69	10.50	8.79	33.34	100.36	1,487.45	53.11
Sum	1,165.81	601.14	36.99	1,198.78	61.88	36.05	514.72	314.33	57,969.15	225.98
Count	77.00	77.00	77.00	77.00	77.00	77.00	77.00	76.00	77.00	77.00
Confidence Level(95.0%)	3.45	1.82	0.50	4.08	0.49	0.36	1.77	3.89	102.42	2.26

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 77) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Calculated Log Uniform Min[3]			1.16	0.65	8.79E-11	0.18	2.22E-05	6.17E-08	0.23	2.91E-09	0.00	7.34E-07
Maximum			59.68	29.86	12.33	97.69	10.50	8.79	33.34	100.36	1,487.45	53.11
Probability distribution shape:			log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	uniform	log-uniform

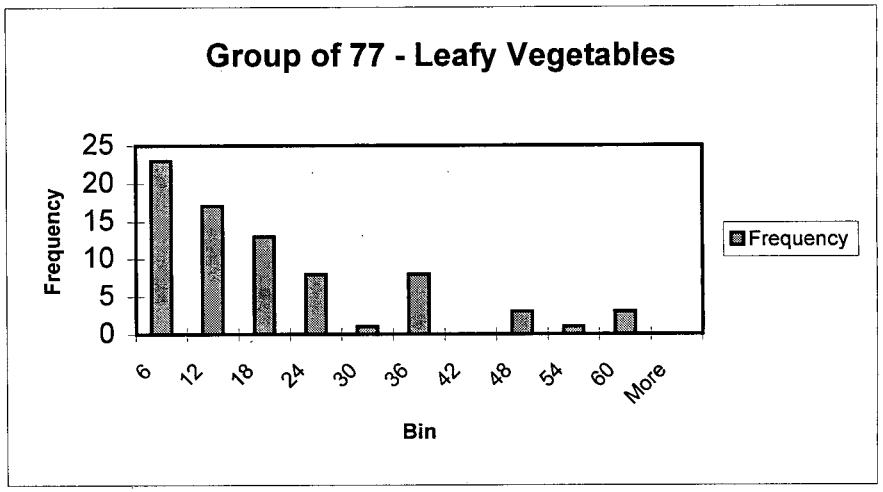
Notes: [1]The values shown for food are in kilograms; for milk and tap water they are in liters. A blank cell indicates that the respondent did not provide an answer.

[2]Females are coded as a 2 and males are coded as a 1.

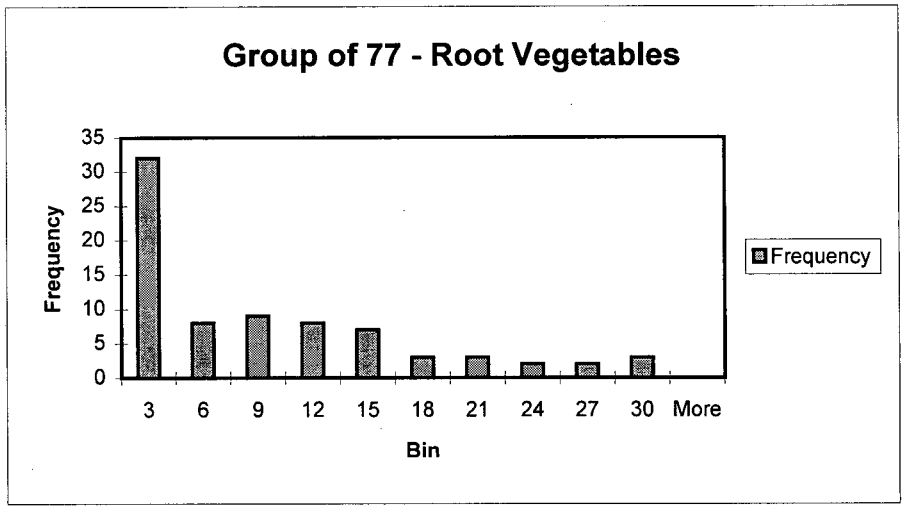
[3]Log uniform minimum is calculated from Ragan (1998) using an unrounded value for the mean.

Histograms for group of 77 for each food group.

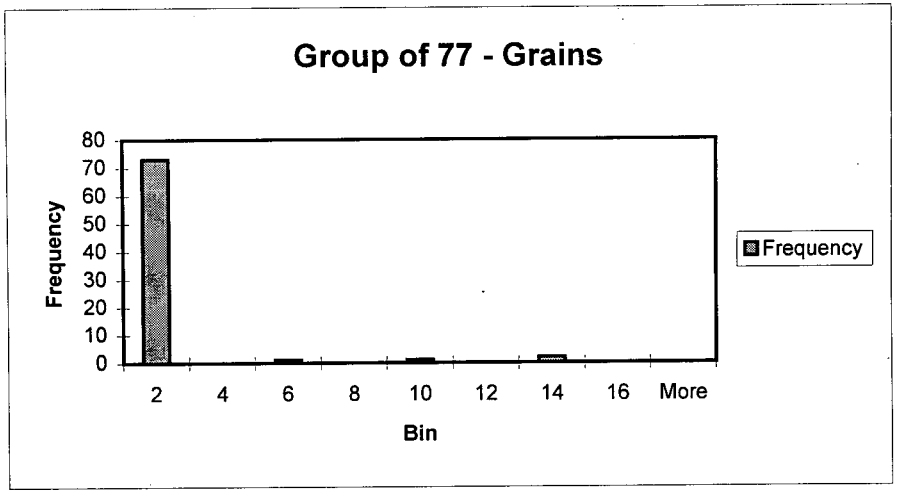
Food Type	From Column	Bin	Frequency
Leafy Vegetable	D	*Bin*	*Frequency*
	6	6	23.00
	12	12	17.00
	18	18	13.00
	24	24	8.00
	30	30	1.00
	36	36	8.00
	42	42	0.00
	48	48	3.00
	54	54	1.00
	60	60	3.00
		More	0.00
			77.00



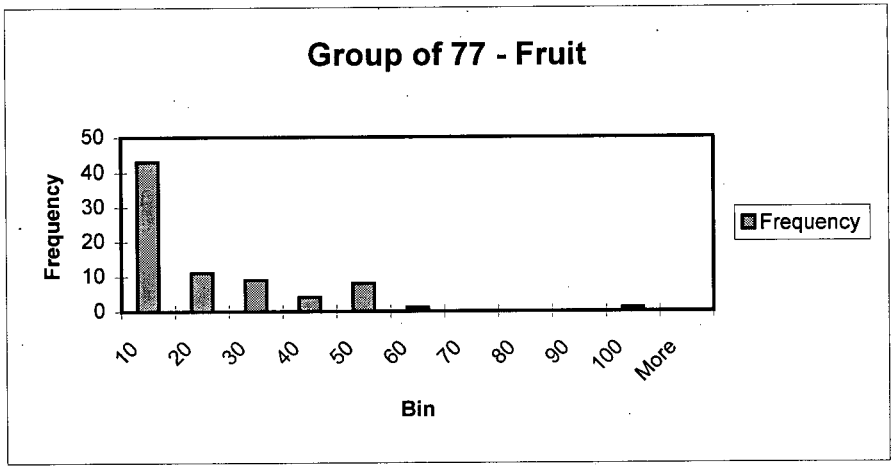
		Bin	Frequency
Root Vegetable	E	*Bin*	*Frequency*
	3	3	32.00
	6	6	8.00
	9	9	9.00
	12	12	8.00
	15	15	7.00
	18	18	3.00
	21	21	3.00
	24	24	2.00
	27	27	2.00
	30	30	3.00
		More	0.00
			77.00



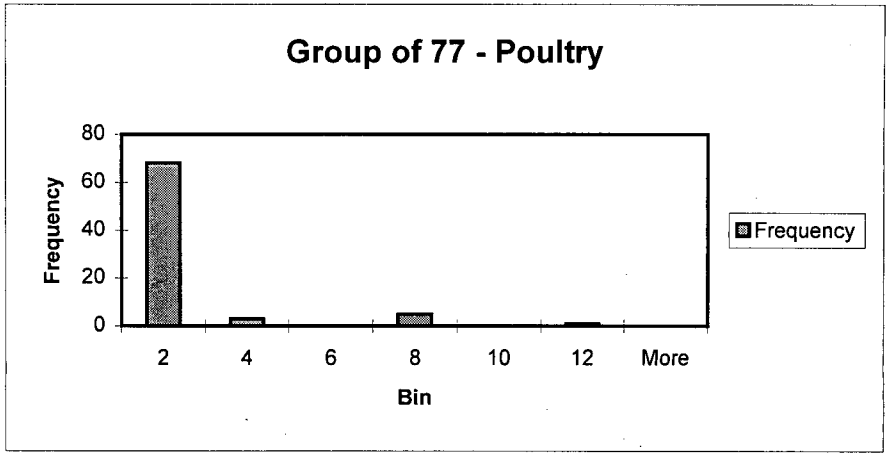
Grains	F	Bin	Frequency
	2	2	73.00
	4	4	0.00
	6	6	1.00
	8	8	0.00
	10	10	1.00
	12	12	0.00
	14	14	2.00
	16	16	0.00
	More		0.00
			77.00



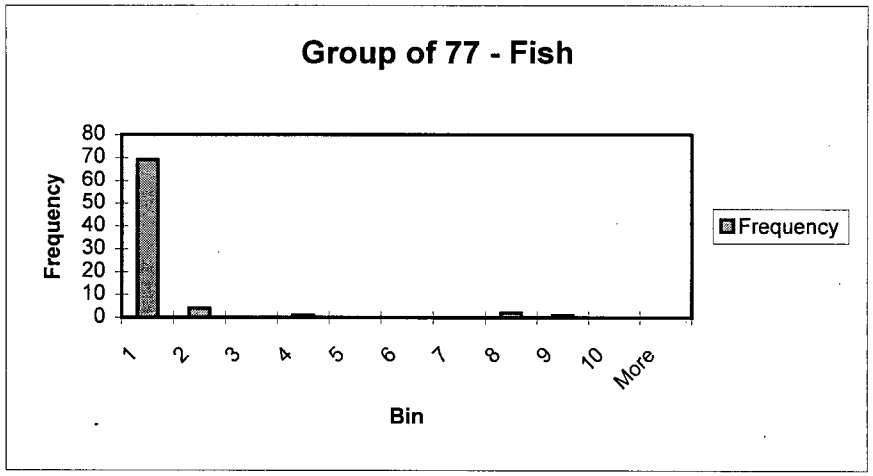
Fruit	G	Bin	Frequency
	10	10	43.00
	20	20	11.00
	30	30	9.00
	40	40	4.00
	50	50	8.00
	60	60	1.00
	70	70	0.00
	80	80	0.00
	90	90	0.00
	100	100	1.00
	More		0.00
			77.00



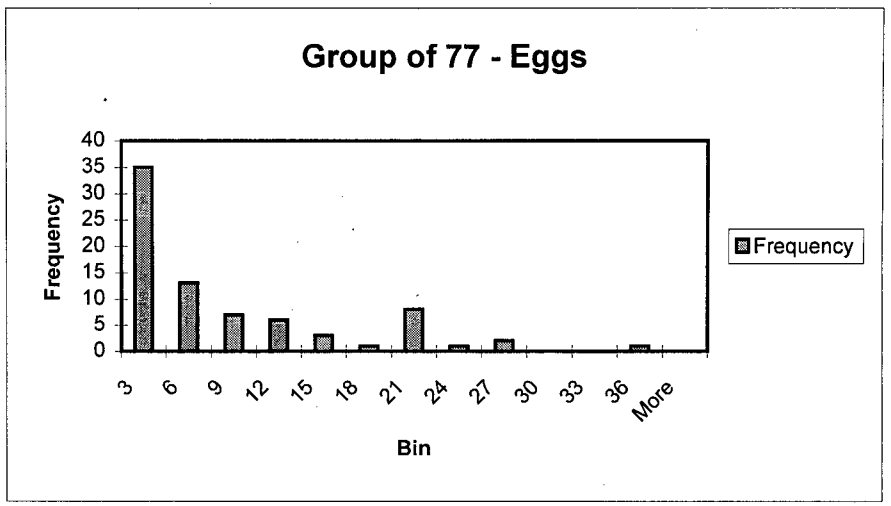
Poultry	H	*Bin*	*Frequency*
	2	2	68.00
	4	4	3.00
	6	6	0.00
	8	8	5.00
	10	10	0.00
	12	12	1.00
		More	0.00



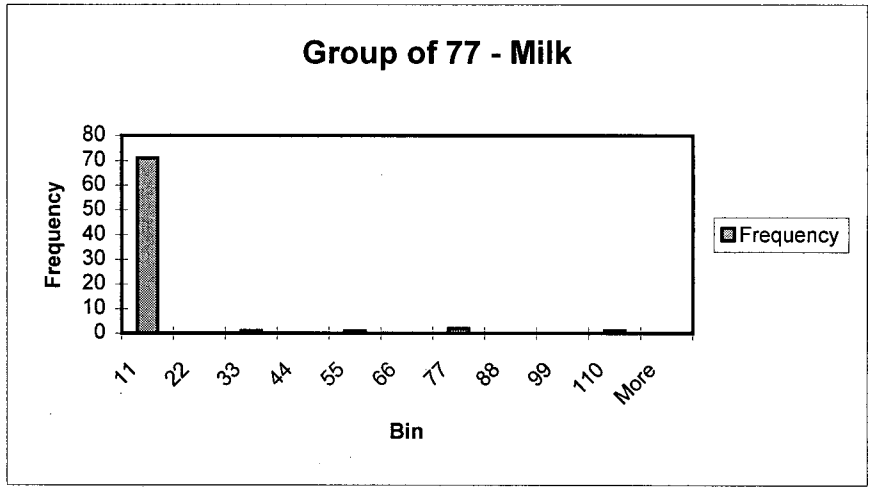
Fish	I	*Bin*	*Frequency*
	1	1	69.00
	2	2	4.00
	3	3	0.00
	4	4	1.00
	5	5	0.00
	6	6	0.00
	7	7	0.00
	8	8	2.00
	9	9	1.00
	10	10	0.00
		More	0.00



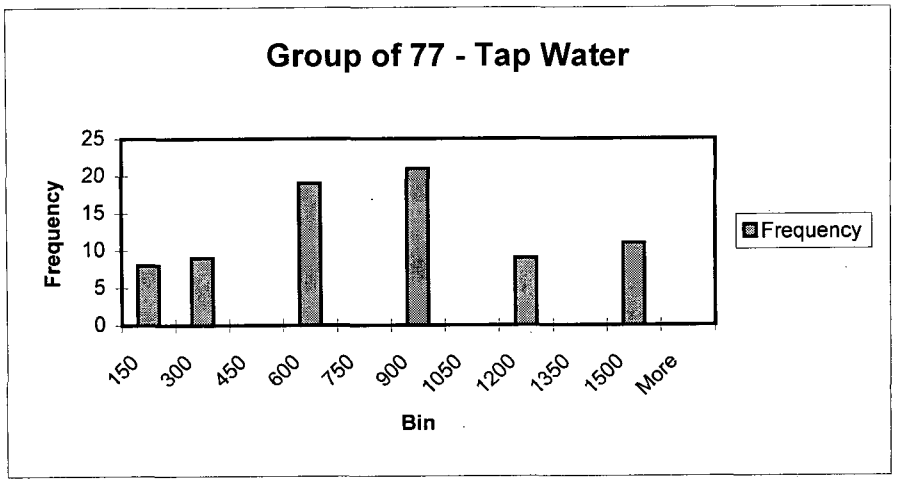
Eggs	J	*Bin*	*Frequency*
	3	3	35.00
	6	6	13.00
	9	9	7.00
	12	12	6.00
	15	15	3.00
	18	18	1.00
	21	21	8.00
	24	24	1.00
	27	27	2.00
	30	30	0.00
	33	33	0.00
	36	36	1.00
		More	0.00



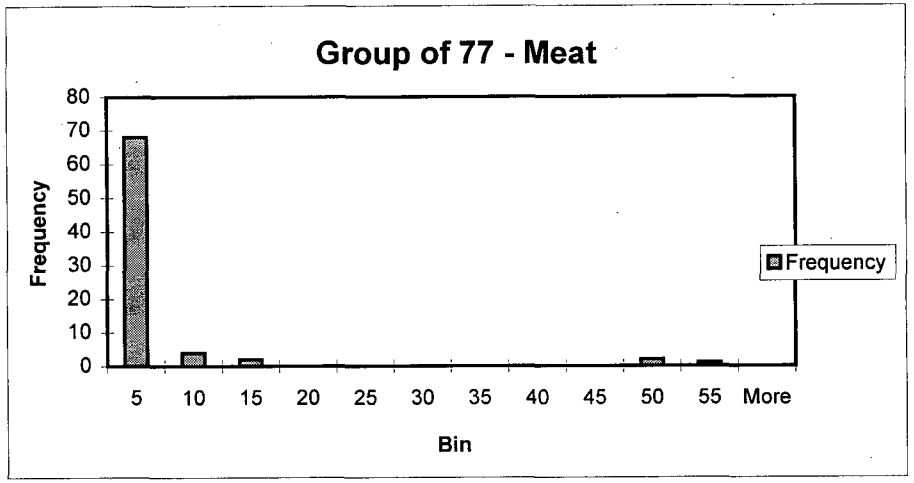
Milk	K	*Bin*	*Frequency*
	11	11	71.00
	22	22	0.00
	33	33	1.00
	44	44	0.00
	55	55	1.00
	66	66	0.00
	77	77	2.00
	88	88	0.00
	99	99	0.00
	110	110	1.00
		More	0.00



Tap Water	L	*Bin*	*Frequency*
	150	150	8.00
	300	300	9.00
	450	450	0.00
	600	600	19.00
	750	750	0.00
	900	900	21.00
	1050	1050	0.00
	1200	1200	9.00
	1350	1350	0.00
	1500	*1500*	11.00
		More	0.00



Meat	M	*Bin*	*Frequency*
	5	5	68.00
	10	10	4.00
	15	15	2.00
	20	20	0.00
	25	25	0.00
	30	30	0.00
	35	35	0.00
	40	40	0.00
	45	45	0.00
	50	50	2.00
	55	55	1.00
		More	0.00



ATTACHMENT III - CALCULATION FOR GROUP OF 129

This provides a description of the calculation CAL-MGR-MD-000005 (DC #26188), performed IAW TDP-MGR-MD-000026 (DC #26187). The calculation is performed in three workbooks, one for each group of 52, 77, and 129 residents.

This workbook provides data on the group of 129 residents of Amargosa Valley who consume locally produced food and water. Food consumption data for this group is a union of the data for the group of 77 (who have a food garden) and the group of 52 (who do not have a food garden). Food consumption data for each of these groups is in TDMS in zip file format and is downloaded and opened into the worksheet. Data for the group of 77 is in DTN: MO9908COLPRFTW.000. Data for the group of 52 is in DTN: MO0001SPACON05.015.

To distinguish between each of the groups, an additional column, "Has garden?" has been added to the spreadsheet. The group of 77 is "Yes" and the group of 52 is "No."

Process:
Descriptive statistics are calculated using standard Excel functions, from the menu:
Tools - Data Analysis - Descriptive Statistics - Summary Statistics
The range is all cells for a food type containing data.

The Calculated LogUniform Minimum is calculated using the formula
Minimum = EXP(LN(Maximum)-(Maximum/Mean))
This formula is found in Ragan, G.E. 1998. "Supplement to the Biosphere Input Data Files on Using Log-Uniform Distributions in GENII-S to Model Uncertainty in Food Consumption Rates." Memorandum from G.E. Ragan (SAIC) to D. Swanson, March 25, 1998, with attachments. ACC: MOL.19990406.0479. (DIRS #125057)

Probability distribution shape is determined by looking at the histograms in worksheet "Histograms - 129." The best estimate of the distribution is log uniform for all food types except tap water, which is uniform.

Histograms on worksheet "Histograms - 129" are calculated using Excel spreadsheet function,
Tools - Data Analysis - Descriptive Statistics - Histogram
The range is all cells for a food type containing data. Bin widths are identified based on the maximum value divided by approximately 10, so as to provide deciles.
Some food types have very small maximums and a smaller divisor is used.

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 129) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	1	2	30.07	22.4	4.11	97.69	2.51	0	1.69	0	867.68	0
Yes	2	1	13.26	5.68	0	48.19	0	0	19.65	0	1198.22	53.11
Yes	3	2	12.89	14.25	0	44.4	0.11	0.13	18.6	0.33	537.13	49.18
Yes	4	2	49.47	13.57	12.33	34.89	1.34	1.51	18.6	0	537.13	5.49
Yes	5	1	30.53	17.05	0	12.05	0	7.5	12.5	0	867.68	48.53
Yes	6	2	58.51	6.48	0	48.84	0	0	3.23	0	867.68	2.07
Yes	7	2	20.04	29.86	0	41.87	7.36	0	18.6	0	867.68	0
Yes	8	1	14.25	25.01	0	26.51	7.88	0	33.34	68.02	867.68	7.18
Yes	9	1	35.28	25.01	0	53.01	0	0	0	0	537.13	0
Yes	10	1	35.17	29.47	0	45.44	0	0	0	0	867.68	0
Yes	11	2	31.13	16.29	0	36.63	0	0	18.6	0	867.68	0
Yes	12	2	0	19	0	36.63	7.8	7.03	23.67	100.36	537.13	0
Yes	13	1	59.68	22.73	0	9.64	0	0.11	0	0	867.68	0
Yes	14	2	59.26	14.93	0	4.44	0.67	1.51	0.92	0	867.68	0.94
Yes	15	1	21.4	5.36	0	18.93	0	0	25.01	0	537.13	11.87
Yes	16	2	42.72	13.57	0	1.9	0.67	0	11.84	0	1198.22	9.67
Yes	17	2	10.61	19	0	26.17	0	0	18.6	0	1487.45	0
Yes	18	2	14.7	6.91	0	38.38	0.11	0.75	11.84	0	537.13	0.68
Yes	19	2	45.68	19	0	3.81	0	0	3.69	0	0	0
Yes	20	1	43.4	8.53	0	18.07	0	0	0.32	0	1487.45	0.44
Yes	21	2	12.23	10.18	0	44.4	0	0.5	0	0	537.13	2.36
Yes	22	2	32.75	9.5	0	10.47	0.56	0.38	11.84	0	1198.22	0.06
Yes	23	2	9.36	14.25	0	26.17	3.68	0	11.84	0	0	0
Yes	24	1	21.43	11.37	0	9.64	2.39	1.36	12.12	0	247.91	5.95
Yes	25	1	30.71	27.28	0	0	0	0	5.68	0	1198.22	0.22
Yes	26	1	8.88	11.37	0	24.1	7	0	7.58	no recall	537.13	0.93
Yes	27	2	22.49	6.48	0	13.32	0.67	1.51	13.53	45.62	867.68	1.58
Yes	28	2	2.21	1.85	0	41.87	0	0	11.84	0	867.68	0
Yes	29	1	22.7	1.46	0	7.23	0	0	24.25	0	867.68	0.94
Yes	30	1	24.04	12.5	0	1.89	0	0	16.67	0	0	0.15
Yes	31	2	7.88	4.07	0	22.2	0	0	18.6	0	537.13	1.88
Yes	32	2	14.29	10.18	0	24.42	0	0	5.38	0	867.68	0
Yes	33	1	9.52	1.95	0	24.1	10.5	0	7.14	0	867.68	0

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 129) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	34	2	18.37	9.5	0	5.23	0	8.79	5.07	0	0	0.19
Yes	35	2	14.06	6.91	0	26.17	0	0	0	0	867.68	0
Yes	36	2	0.89	0.74	0	44.4	0	0	0.23	0	537.13	0
Yes	37	2	34.26	0	0	4.44	0	0	5.07	0	537.13	2.07
Yes	38	2	12.46	2.96	0	26.64	0	0	1.69	0	1487.45	0
Yes	39	1	21.83	0.97	0	19.28	0	0.34	0	0	1487.45	0
Yes	40	2	7.85	6.79	0	6.66	0	0	18.6	0	867.68	1.88
Yes	41	1	20.84	12.5	0	3.79	0	0	0.65	0	1198.22	0
Yes	42	2	7.12	16.29	8.22	0	0.67	0	0.54	0	247.91	0.81
Yes	43	2	3.55	9.5	0	1.9	0	0.13	3.8	0	537.13	13.62
Yes	44	1	9.82	5.68	0	7.23	1.19	0.23	8.34	24.73	82.64	0
Yes	45	2	4.41	8.14	0	15.7	0	0	1.15	0	1487.45	0.38
Yes	46	2	7.96	8.64	0	0.95	0	0	11.84	0	1487.45	0
Yes	47	2	15.7	3.45	0	8.88	0	0	0	0	1487.45	0
Yes	48	1	8.51	5.68	0	12.05	0	0	1.79	0	247.91	0
Yes	49	2	15.59	0.74	0	11.1	0	0	0.46	0	1487.45	0
Yes	50	2	13.22	4.07	0	8.88	0	0	0.92	75.27	1487.45	0.38
Yes	51	2	7.15	5.18	12.33	1.9	0	0.25	0	0	247.91	0
Yes	52	2	2.8	2.59	0	17.76	0	0	2.31	0	247.91	0
Yes	53	2	6.66	1.85	0	8.88	0	0	5.07	0	537.13	0
Yes	54	2	12.54	8.64	0	0	0	0	0.92	0	1198.22	0
Yes	55	2	6.4	0.37	0	4.44	0	0	8.88	0	537.13	0
Yes	56	1	10.96	9.09	0	0	0	0	0	0	867.68	0
Yes	57	2	2.08	2.59	0	6.66	0	3.77	4.23	0	537.13	0.38
Yes	58	2	7.66	0.37	0	2.22	0	0	8.88	0	0	0
Yes	59	2	0.44	0.86	0	17.76	0	0	0	0	1487.45	0
Yes	60	1	17.28	0	0	0	0.48	0	0.32	0	537.13	0.23
Yes	61	1	3.81	1.95	0	9.64	0	0	0	0	867.68	0
Yes	62	2	1.47	0	0	4.44	0	0	8.88	0	537.13	0
Yes	63	1	0.74	0	0	4.13	6.13	0	3.25	0	0	0
Yes	64	1	6.98	2.44	0	0	0.16	0	3.79	0	1487.45	0.47
Yes	65	2	0	0.37	0	4.44	0	0	8.61	0	247.91	0
Yes	66	2	5.88	0	0	0	0	0.25	5.07	0	867.68	0
Yes	67	2	6.79	0.74	0	0.95	0	0	2.69	0	867.68	0

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 129) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
Yes	68	2	0.44	0	0	8.88	0	0	0	0	82.64	0
Yes	69	1	0.74	0	0	0.34	0	0	3.57	0	247.91	0
Yes	70	1	0	0	0	2.07	0	0	0	0	1198.22	2.34
Yes	71	2	0.15	2	0	1.27	0	0	0	0	867.68	0
Yes	72	2	0	2.59	0	0	0	0	0.46	0	1198.22	0
Yes	73	1	0.58	0	0	2.06	0	0	0	0	1198.22	0
Yes	74	2	0.79	0	0	0	0	0	0.15	0	247.91	0
Yes	75	1	0.19	0.16	0	0.34	0	0	0	0	247.91	0
Yes	76	2	0.3	0.25	0	0	0	0	0	0	537.13	0
Yes	77	1	0	0	0	0	0	0	0.32	0	537.13	0
No	1	2	4.15	0	0	0	0	0	0.08	0	247.91	0
No	2	1	0	1.95	0	0	0	0	0	0	247.91	0
No	3	1	0.19	1.22	0	0	0	0	3.57	0	247.91	0
No	4	2	0	2.16	0	5.55	0	0	0	0	247.91	0
No	5	2	0	0	0	0	0	0	8.61	0.33	537.13	27.24
No	6	2	0	0	0	0	0	0	0.08	0	247.91	0
No	7	2	1.2	0	0	1.9	0	0	5.38	0	247.91	0
No	8	1	0	0	0	6.02	0	0	3.57	0	247.91	0
No	9	2	2.08	0	3.29	22.2	3.9	0.25	1.08	0	247.91	7.88
No	10	1	22.38	18.75	0	0	1.91	0	1.3	0	247.91	17.18
No	11	1	2.71	0.97	0	1.03	0	0	1.3	136.03	867.68	26.33
No	12	2	0	0	0	0	0	0	3.8	0	247.91	0
No	13	1	0	2.27	0	0.34	0	0	0		867.68	0
No	14	1	2.59	0.97	0	0	3.82	0	16.67	0	247.91	1.17
No	15	1	0	6.82	0	4.82	0	0.34	0	136.03	247.91	7.8
No	16	2	6.14	0.37	0	6.66	0	0.13	10.76	100.36	537.13	7.94
No	17	1	1.85	5.68	0	12.05	0	0	0	0		0.15
No	18	1	10.85	3.9	0	1.03	0.48	0.34	1.79	0	0	0.67
No	19	1	1.16	0	0	2.07	0	0	0	0	0	0
No	20	2	34.26	0.74	0	0.32	0	0	11.84	0	1487.45	0

CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 129) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
No	21	1	0.19	0	0	0	0	0	0	0	0	0
No	22	2	1.11	0	0	0.95	0	0	0	0	1487.45	0
No	23	2	0.44	1.48	0	3.81	0	0	4.3	0	0	0
No	24	1	11.81	9.09	0	7.75	0	0.34	0	0	1487.45	1.87
No	25	2	3.56	2.96	0	13.32	0	0	0	17.11	0	15.12
No	26	2	47.91	10.86	0	73.27	0	0	23.67	0	1487.45	12.82
No	27	2	0	0	0	0	0	0	6.46	[illegible]	0	0
No	28	1	20.47	4.55	0	4.13	0.95	0	1.3	0.44	1487.45	0.67
No	29	2	0.15	6.91	0	16.65	0	0	23.67	54.74	1487.45	0
No	30	2	0.89	4.32	0	11.1	0.67	0	1.08	0	867.68	10.23
No	31	2	0.44	0.37	0	0.95	0	0	0	0	867.68	0
No	32	2	0	0	0	4.44	0	0	0.08	0	867.68	0
No	33	2	0	0.74	0	10.47	0	0	0.46	0	867.68	0.68
No	34	2	4.8	0.93	0	6.66	0	0	8.88	0	867.68	0
No	35	2	2.06	0.37	0	16.65	0	0	2.31	0	867.68	0
No	36	2	0.89	0	0	0	0	0	0	0	537.13	0
No	37	2	0	0	0	4.44	0	0	0.08	0	867.68	0
No	38	2	0.44	0	0	0.95	0	0	0	0	537.13	0
No	39	2	5.34	4.44	0	1.59	0	0.5	0	0	867.68	0.18
No	40	1	0.19	0	0	1.38	0	0.11	0.81	0	537.13	0
No	41	1	10.18	0.97	0	12.05	0	0	1.52	0	867.68	1.09
No	42	2	0.74	4.07	0	4.44	0	0	0.23	0	537.13	0.11
No	43	2	5.19	0	0	11.1	0	0	0	0	867.68	0
No	44	1	0.37	0.16	0	0.34	0	0.11	0	0	537.13	0
No	45	2	3.55	4.75	0	6.98	0	0	0	0	867.68	28.03
No	46	1	11.1	5.68	0	18.93	8.75	0	0.54	0	537.13	7.51
No	47	1	0	0	0	9.64	0	0	5.36	0	867.68	0
No	48	1	6.78	0	0	12.05	0	1.7	12.5	0	537.13	0
No	49	2	34.57	4.32	0	15.7	0	0.13	0.08	0	867.68	17.34
No	50	2	0.89	0	0	0	0	0	1.73	0	537.13	0
No	51	2	0	38.01	0	4.76	0	0	18.6	9.77	867.68	0.34
No	52	2	1.47	0.86	0	0	0.33	0	11.84	18.25	867.68	20.9

DTN: MO0001SPACON05.015 and MO9908COLPRFTW.000

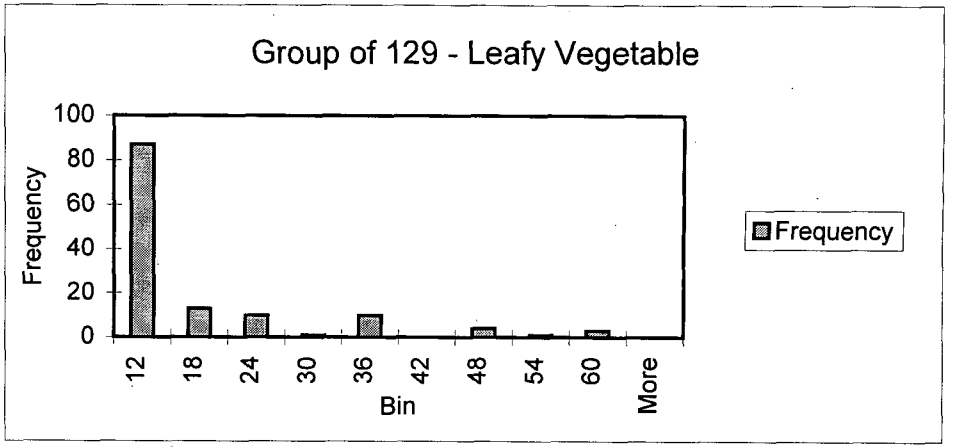
CONSUMPTION VALUES BY RESPONDENTS WHO CONSUME FOOD ITEMS (Group of 129) [1,2]

Has garden?	Case No.	Gender	Leafy Vegetable	Root Vegetable	Grains	Fruit	Poultry	Fish	Eggs	Milk	Tap Water	Meat
		Total	1,430.90	752.78	40.28	1,537.27	82.69	40.00	710.05	787.39	89,990.63	439.23
		No. Cases	129	129	129	129	129	129	129	126	128	129
		Mean	11.09	5.84	0.31	11.92	0.64	0.31	5.50	6.25	703.05	3.40
	Descriptive Statistics											
		Mean	11.09	5.84	0.31	11.92	0.64	0.31	5.50	6.25	703.05	3.40
		Standard Error	1.25	0.67	0.15	1.42	0.17	0.11	0.64	2.09	39.64	0.80
		Median	6.14	2.59	0.00	5.55	0.00	0.00	1.73	0.00	702.41	0.00
		Mode	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	867.68	0.00
		Standard Deviation	14.17	7.66	1.74	16.16	1.90	1.24	7.29	23.48	448.50	9.13
		Sample Variance	200.76	58.63	3.02	261.29	3.62	1.55	53.08	551.48	201,151.15	83.37
		Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Maximum	59.68	38.01	12.33	97.69	10.50	8.79	33.34	136.03	1,487.45	53.11
		Sum	1,430.90	752.78	40.28	1,537.27	82.69	40.00	710.05	787.39	89,990.63	439.23
		Count	129.00	129.00	129.00	129.00	129.00	129.00	129.00	126.00	128.00	129.00
		Confidence Level(95.0%)	2.47	1.33	0.30	2.82	0.33	0.22	1.27	4.14	78.44	1.59
		Calculated Log Uniform Min[3]	0.27	0.06	8.74E-17	0.03	8.08E-07	4.29E-12	0.08	4.79E-08	0.00	8.93E-06
		Maximum	59.68	38.01	12.33	97.69	10.50	8.79	33.34	136.03	1,487.45	53.11
		Probability distribution shape:	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	log-uniform	uniform	log-uniform

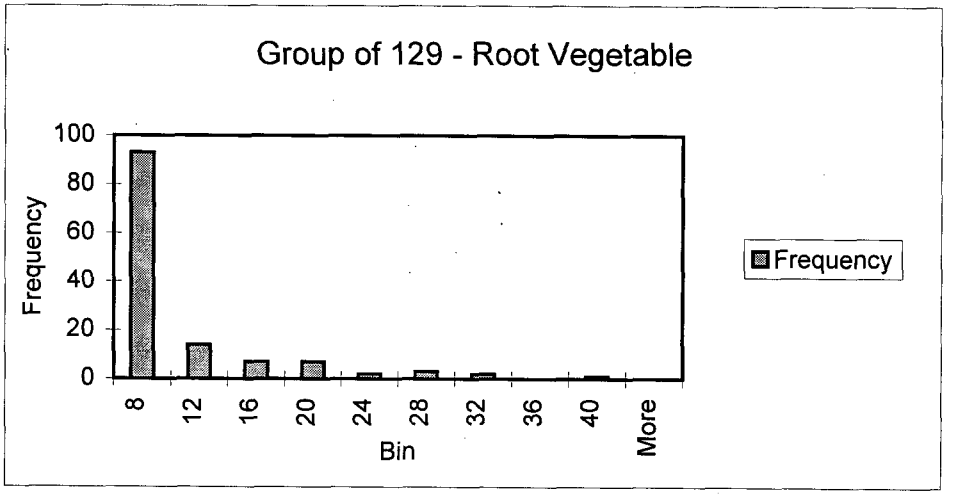
Notes:
[1]The values shown for food are in kilograms; for milk and tap water they are in liters. A blank cell indicates that the respondent did not provide an answer.
[2]Females are coded as a 2 and males are coded as a 1.
[3]Log uniform minimum is calculated from Ragan (1998) using an unrounded value for the mean.

Histograms for group of 129 for each food group.

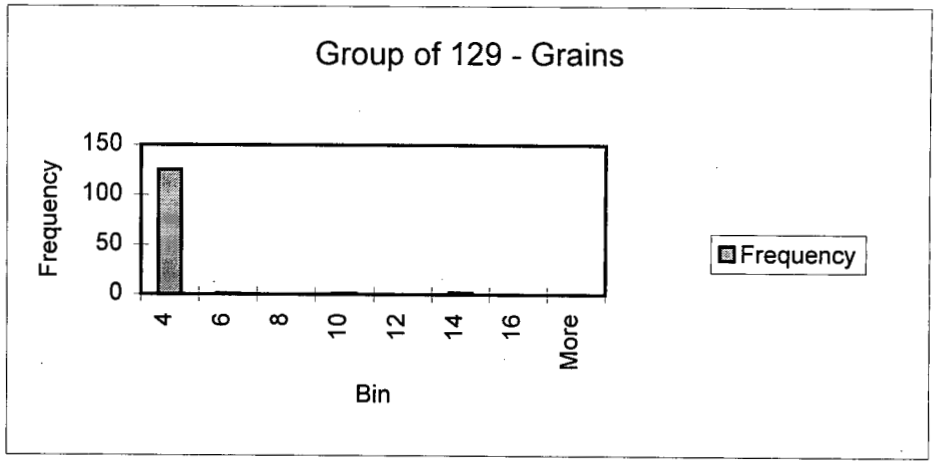
Food Type	From Column	Bin	Frequency
Leafy Vegetable	D		
	6	12	87.00
	12	18	13.00
	18	24	10.00
	24	30	1.00
	30	36	10.00
	36	42	0.00
	42	48	4.00
	48	54	1.00
	54	60	3.00
	60	More	0.00



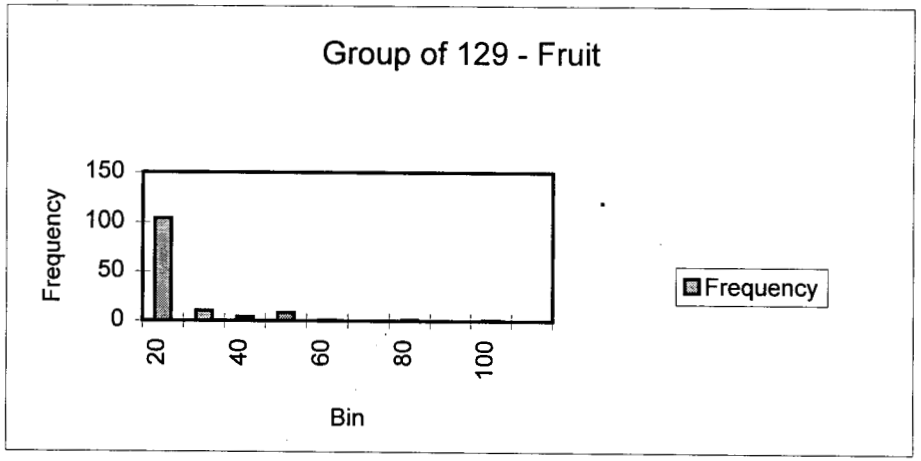
		Bin	Frequency
Root Vegetable	E		
	4	8	93.00
	8	12	14.00
	12	16	7.00
	16	20	7.00
	20	24	2.00
	24	28	3.00
	28	32	2.00
	32	36	0.00
	36	40	1.00
	40	More	0.00



Grains	F	*Bin*	*Frequency*
	2	4	125.00
	4	6	1.00
	6	8	0.00
	8	10	1.00
	10	12	0.00
	12	14	2.00
	14	16	0.00
	16	More	0.00

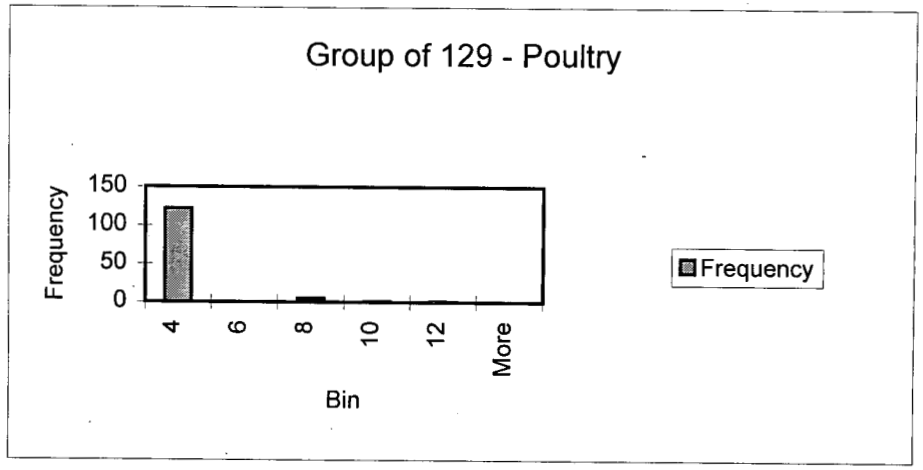


Fruit	G	*Bin*	*Frequency*
	10	20	104.00
	20	30	10.00
	30	40	4.00
	40	50	8.00
	50	60	1.00
	60	70	0.00
	70	80	1.00
	80	90	0.00
	90	100	1.00
	100	More	0.00



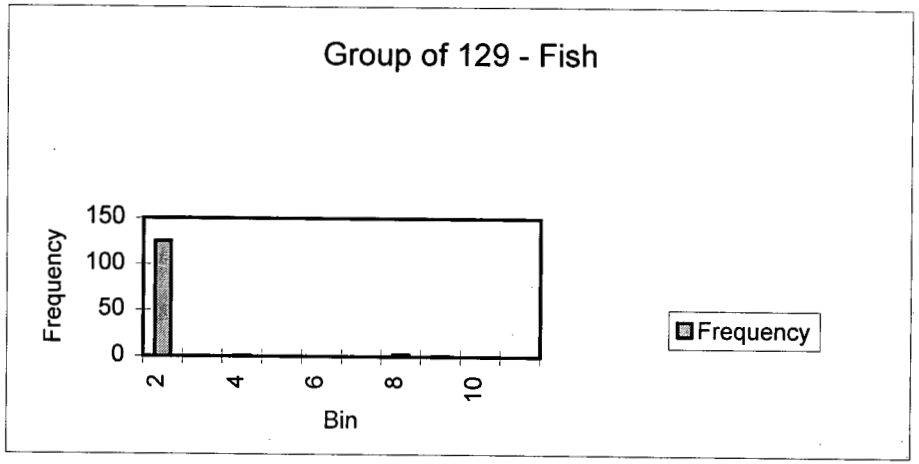
Poultry

H	*Bin*	*Frequency*
2	4	122.00
4	6	0.00
6	8	5.00
8	10	1.00
10	12	1.00
12	More	0.00

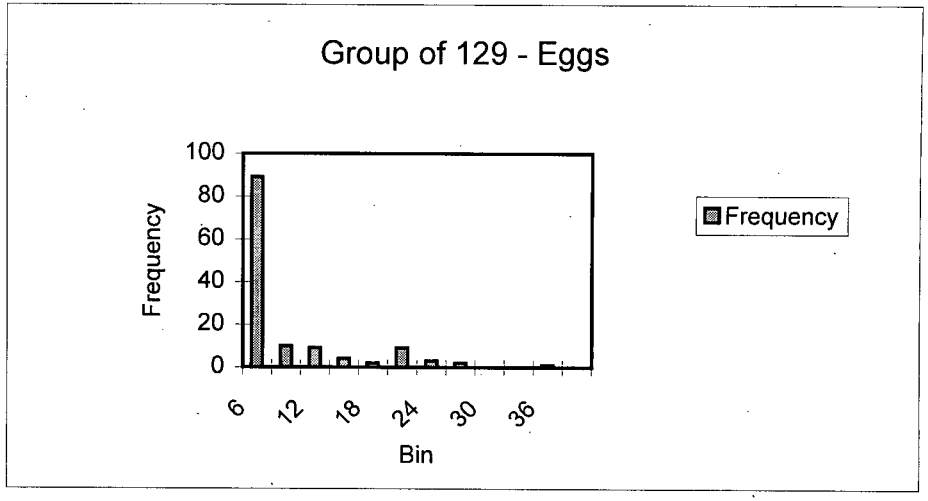


Fish

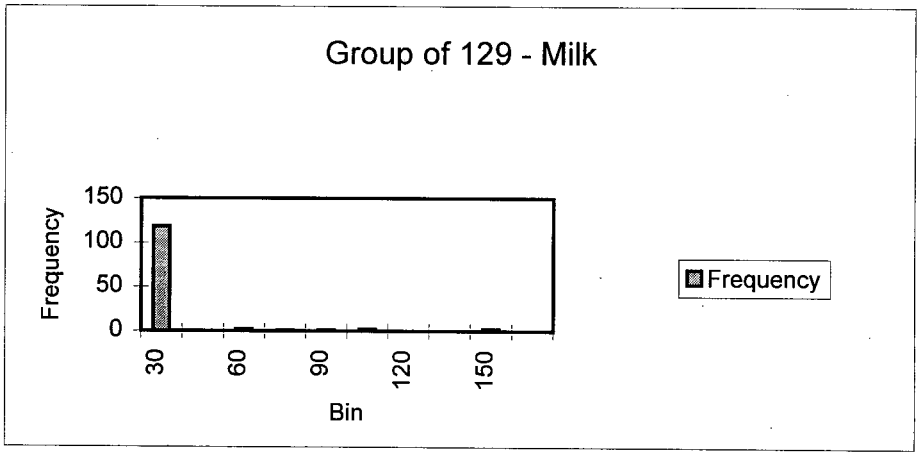
I	*Bin*	*Frequency*
1	2	125.00
2	3	0.00
3	4	1.00
4	5	0.00
5	6	0.00
6	7	0.00
7	8	2.00
8	9	1.00
9	10	0.00
10	More	0.00



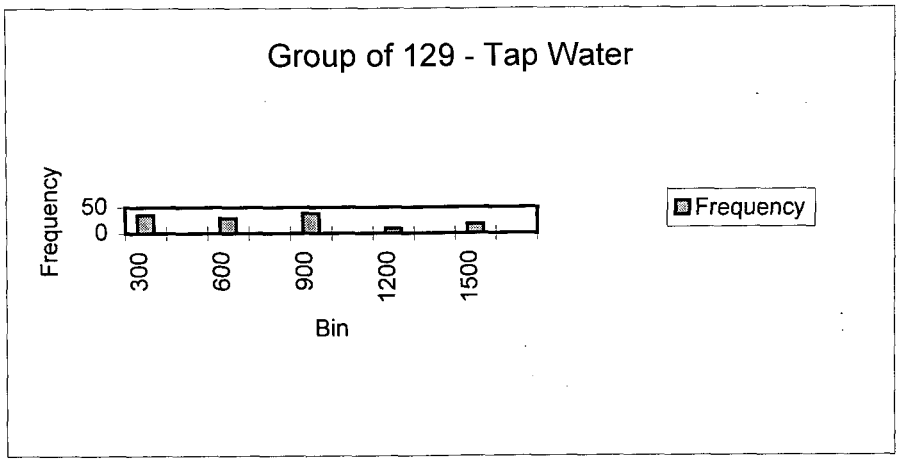
Eggs	J	*Bin*	*Frequency*
	3	6	89.00
	6	9	10.00
	9	12	9.00
	12	15	4.00
	15	18	2.00
	18	21	9.00
	21	24	3.00
	24	27	2.00
	27	30	0.00
	30	33	0.00
	33	36	1.00
	36	More	0.00



Milk	K	*Bin*	*Frequency*
	15	30	118.00
	30	45	0.00
	45	60	2.00
	60	75	1.00
	75	90	1.00
	90	105	2.00
	105	120	0.00
	120	135	0.00
	135	150	2.00
	150	More	0.00



Tap Water	L	*Bin*	*Frequency*
	150	300	35.00
	300	450	0.00
	450	600	29.00
	600	750	0.00
	750	900	38.00
	900	1050	0.00
	1050	1200	9.00
	1200	1350	0.00
	1350	1500	17.00
	1500	More	0.00



Meat	M	*Bin*	*Frequency*
	5	10	115.00
	10	15	4.00
	15	20	3.00
	20	25	1.00
	25	30	3.00
	30	35	0.00
	35	40	0.00
	40	45	0.00
	45	50	2.00
	50	55	1.00
	55	More	0.00